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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/511,896 | 06/20/2005 | Hideki Miyanishi | 037297.55537US | 6423 |
| 23911 7590 03/28/2007 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300 | | | EXAMINER SINGH, KAVEL | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3651 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 03/28/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/511,896

Applicant(s)

MIYANISHI ET AL.

Examiner

Kavel P. Singh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>10/20/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 13-19 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fenty U.S. Patent No. 5,277,301 in view of Lago U.S. Patent No. 5,228,557 in further view of Killen U.S. Patent No. 3,783,777.

Claims 13-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Fenty U.S. Patent No. 5,277,301.

Claim 13, Fenty teaches a transfer conveyor, a plurality of transfer pieces (58,60) each comprising a pair of erect flat spacer members (62) connected to both ends sides of connection members that constitute a transfer passage of articles including foodstuff, are connected to each other to be capable of moving in the direction of transfer relative to each other and can be piled in a vertical spiral by allowing an upper side positioned space member to rise on a spacer member positioned right under the upper side (C3 positioned spacer member that has a contact face extending parallel to the transfer direction at the lower end L32-35), but does not teach as Lago teaches an inside chain

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(19) to allow one of the pair of the spacer members riding on the inside chain (19) to move together with the inside chain (19) and an outside chain (18) to allow the other of the pair of the spacer members riding on the outside chain (18) to move together with the outside chain (18) are provided, each of the spacer members contacting the chain with said contact face to ride on the chain, and the inside chain (19) and outside chain (19) are driven by a single motor (25) via a drive shaft (30) (C3 L59-62) (C4 L4-6) and are looped respectively over an inside sprocket (39) and an outside sprocket (39) driven by the single motor (25) via the drive shaft (30), the chains being composed to be an endless chain respectively to allow transfer pieces to be advanced to the spiral and then to return to the sprockets (39) (C4 L15-20) and Killen teaches a speed change gear drive is mounted in the drive shaft extending between the inside sprocket (87) and outside sprocket (87) to reduce the rotation speed of the inside sprocket to be slower than the rotation speed of the outside sprocket (C4 L3-10). At the time of the invention it would have been obvious to one of ordinary skill in the art to employ the multiple chain driven system with a speed change drive into the invention of Fenty as taught by Lago and Killen in order to maintain control of the conveyor speed and part handling.

Claim 14, Fenty teaches a spiral conveyor system, but does not utilize multiple chains and sprockets with a single drive. Killen teaches an axes of rotation shafts to drive (11) the sprockets (23,25) are disposed horizontally (C3 L55-61). At the time of the invention it would have been obvious to one of ordinary skill in the art to arrange the drive system horizontally into the invention of Fenty as taught by Killen in order for ease of maintenance.

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Claim 15, Fenty teaches the transfer conveyor is guided looping over guide pulleys from the way-out of the spiral pile to the portion where the transfer conveyor rides on the (C3 L55-60), but does not teach as Lago teaches an inside (19) and outside (18) chain to be advanced to the spiral pile where the pair of space members contact the outer periphery of the pulleys (C3 L59-62). At the time of the invention it would have been obvious to one of ordinary skill in the art to use a multiple chain system to drive the conveyor into the invention of Fenty as taught by Lago to allow the space members to convey easily along the path.

Claim 16, Fenty teaches a chain driven system, but does not specify the gear ratio.

Killen teaches that the ratio of number of teeth of the inside gear (103) connected to the inside sprocket to that of the outside gear (104) connected to the outside sprocket is determined to coincide with the ratio of the curvature radius of the outside chain (29) at the outside sprocket to that of the inside chain (27) at the inside sprocket (C4 L17-29).

At the time of the invention it would have been obvious to one of ordinary skill in the art to connect the inside sprocket to the outside gear with multiple chains into the invention of Fenty as taught by Killen in order to drive a set rollers individually from another using a single drive source.

Claim 17, Fenty teaches a chain driven system, but does not disclose multiple chains with the ability to be curved in a lateral direction. Killen teaches an inside chain and outside chain that are composed to be curved chains deformable in lateral direction perpendicular to the direction along the transfer direction of the transfer passage (C4 L45-51). At the time of the invention it would have been obvious to one of ordinary skill

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in the art to add flexibility of multiple chains to move in the lateral position into the invention of Fenty as taught by Killen in order to drive a set rollers individually from another using a single drive source.

Claim 18, Fenty does not teach as Killen teaches tension pulleys and Lago teaches the inside chain (27) and outside chain (29) and tension springs each to pull each tension pulley for tensioning chain (C3 L42-45). At the time of the invention it would have been obvious to one of ordinary skill in the art to design a tension system as taught by Killen to keep the chain tight to allow smooth transfer of the articles.

Claim 19, Fenty teaches the transfer conveyor is accommodated in an insulated room provided with a refrigerating machine and the motor is installed outside the insulated room (C2 L1-5).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

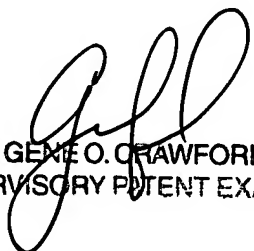
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kavel P. Singh whose telephone number is (571) 272-2362. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Crawford can be reached on (571) 272-6911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KPS


GENE O. CRAWFORD
SUPERVISORY PATENT EXAMINER